

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well

☐ Oil Well ☐ Gas Well ☒ Other

2. Name of Operator

Marathon Oil Company

3. Address and Telephone No.

P.O. Box 552, Midland, TX 79702 915/682-1626

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1650' FNL & 1650' FEL
SEC. 11, T-21-S, R-23-E

FORM APPROVED

Budget Bureau No. 1004-0135

Expires: March 31, 1993

5. Lease Designation and Serial No.

NM04827 NM05608 R

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

N. INDIAN BASIN UNIT

8. Well Name and No.

N. INDIAN BASIN UNIT 2

9. API Well No.

30-015-10336 R

10. Field and Pool, or exploratory Area

Indian Basin Upper Pool R

11. County or Parish, State

EDDY COUNTY NM

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒ Notice of Intent
☐ Subsequent Report
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Abandonment
☒ Recompletion
☐ Plugging Back
☐ Casing Repair
☐ Altering Casing
☐ Other
- ☐ Change of Plans
☐ New Construction
☐ Non-Routine Fracturing
☐ Water Shut-Off
☐ Conversion to Injection
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

WELL IS A PROPOSED RECOMPLETION FOR SWD TO THE DEVONIAN.

AN APPLICATION TO INJECT FLUIDS HAS BEEN MADE WITH THE NMCD.

SEE ATTACHED FOR DETAIL.

RECEIVED

FEB 2 1996

OIL CON. DIV.
DIST. 2

APPROVED
By State

14. I hereby certify that the foregoing is true and correct

Signed W. J. Duane FORDPN

Title DRILLING SUPERINTENDENT

Date 01/04/96

(This space for Federal or State office use)

Approved by State

Title Petroleum Engineer

Date 1/31/96

Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK DRILL <input type="checkbox"/> DEEPEN <input checked="" type="checkbox"/>			5. LEASE DESIGNATION AND SERIAL NO. NM 05608	
b. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input checked="" type="checkbox"/> SINGLE ZONE <input type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>			6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
2. NAME OF OPERATOR Marathon Oil Company			7. UNIT AGREEMENT NAME N. INDIAN BASIN UNIT	
3. ADDRESS AND TELEPHONE NO. P.O. Box 552, Midland, TX 79702 915/682-1626			8. FARM OR LEASE NAME, WELL NO. N. INDIAN BASIN 2	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. *) At surface 1650' FNL & 1650' FEL At proposed prod. zone 1650' FNL & 1650' FEL			9. API WELL NO. 30-015/10336	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 10 MILES WEST OF LAKEWOOD, NM			10. FIELD AND POOL, OR WILDCAT SEE BELOW	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 3630'			11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA SEC 11, T-21-S, R-23-E	
16. NO. OF ACRES IN LEASE 4160			12. COUNTY OR PARISH EDDY	
17. NO. OF ACRES ASSIGNED TO THIS WELL NONE-SWD			13. STATE NM	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. SEE BELOW			20. ROTARY OR CABLE TOOLS ROTARY	
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 3785' GL 3794' KB			22. APPROX. DATE WORK WILL START* ASAP	

23. PROPOSED CASING AND CEMENTING PROGRAM				
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
*17 1/2"	13 3/8"	48	236'	300 CIRC TO SURF
*12 1/4"	9 5/8"	36	2379'	1050 CIRC 180 SX
*8 3/4"	7"	23,26	8006'	900 TOC @ 4000'
6 1/8"	4 1/2"	11,35	10000'	215 TOC @ 7800'

3 3/8" - OPEN HOLE TO 11000'

WELL IS A PROPOSED SWD CONVERSION

*CASING IN PLACE

#18 - FIRST SWD WELL ON THIS LEASE

RECEIVED

FEB 2 1996

OIL CON. DIV.
DIST. 2

API # 30-015-10336

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED <u>W.J. Duman FOR OPN</u>	TITLE <u>DRILLING SUPERINTENDENT</u>	DATE <u>1/18/96</u>
(This space for Federal or State office use)		

PERMIT NO. _____ APPROVAL DATE _____

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY _____ TITLE _____ DATE _____

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Thirteen Point Surface Use Plan
MARATHON OIL COMPANY

North Indian Basin Unit #2
Sec. 25, T-21-S, R-23-E
Eddy County, New Mexico

1. **Existing Roads:** Refer to Vicinity Lease Map.

- a. The proposed wellsite is staked and the surveyor's plat is attached.
- b. To reach the location from Carlsbad, New Mexico: Follow Hwy 285 North of Carlsbad 14 miles. Turn West on Queen's highway (NM 137) for 8.8 miles. Turn right on NM 401 for 5 miles, turn right on Gray Oak Road for 2 miles. Turn right on existing lease road for .3 miles into location.
- c. Existing roads within a one-mile radius (refer to Vicinity Lease Map).
- d. The existing road will be maintained as necessary to provide access during the drilling operation.

2. **Planned Access Road:** Refer to Vicinity Lease Map.

Access will be by existing lease roads. Construction plans will require blading and rolling the road and pad. No access road will be required. The access road will enter the drilling pad on the southwest corner. The drilling location will have a V-door facing east. No new pad will be constructed as this is a recompletion.

3. **Location of Existing Wells:** See Vicinity Lease Map.

4. **Location of Existing and Proposed Production Facilities within a one-mile radius:**

- a. **Existing:** There are 12 oil wells operated by Marathon within a one-mile radius of the proposed location. These locations have production facilities including separators, condensate storage tanks and location drips. Marathon operates a variety of dehydrators, meter runs, and several gathering lines in the one-mile radius.
- b. **New Facilities:** The proposed location will have a produced water manifold and collection battery. The actual equipment and its configuration will be determined after the well is completed.
- c. Rehabilitation of disturbed areas no longer needed for operations will be accomplished by grading, levelling and seeding as recommended.

A. P. D. (cont.)
Thirteen Point Surface Use Plan
North Indian Basin Unit No. 2

5. Location and Type of Water Supply:

- a. Source: Indian Basin Gas Plant, SW/4, NE/4, Sec. 23, T-21-S, R-23-E.
- b. The water will be pumped thru 3" plastic line over existing roads to the well location. No new construction will be required on/along the water route.
- c. No water well will be drilled on this location.

6. Source of Construction Materials:

- a. No new construction will be required for this re-entry.

7. Methods of Handling Waste Material Disposal:

- a. Cuttings - will be deposited in the reserve pit, a 75' x 75' reserve pit will be dug and lined to hold drilling fluids and cuttings.
- b. Drilling fluids - contained in reserve pit and allowed to evaporate. Free water will be removed and transported to an approved disposal site to accelerate pit drying.
- c. Produced fluids - none anticipated.
- d. A portable chemical toilet will be provided.
- e. Garbage and other waste material - garbage and trash will be stored in a receptacle on location and periodically hauled to an approved sanitary landfill.
- f. After the rig moves out, all materials not necessary for operations will be removed. Pits will be backfilled and levelled. The location will be cleaned of all trash and debris.

- 8. Ancillary Facilities:** Camp facilities will not be required. Portable trailers will be on location to house a company drilling foreman and contract toolpusher.

9. Wellsite Layout:

- a. The wellpad layout shows the drillsite layout as staked.
- b. The reserve pit will be fenced on three sides before drilling begins. The fourth side will be fenced when the drilling rig leaves location.
- c. The reserve pit will be lined (8 mil material).

A. P. D. (cont.)
Thirteen Point Surface Use Plan
North Indian Basin Unit No. 2

10. Plans for Restoration of the Surface:

- a. Backfilling, levelling, and contouring are planned as soon as all pits have dried. Waste disposal and spoiled materials will be buried or hauled away immediately after drilling is completed. If production is obtained, the unused area will be restored as soon as possible.
- b. The soil banked material will be spread over the area. Revegetation will be accomplished by planting mixed grasses as per formula by BLM. Revegetation is recommended for road area, as well as around the drill pad.
- c. The reserve pit will be fenced during drilling operations. Fencing will be maintained until levelling and cleanup are accomplished.
- d. If any oil is in the pits and is not immediately removed after operations cease, the pit containing the oil or other adverse substances will be flagged overhead or covered with mesh.
- e. The rehabilitation operations will begin after the drilling rig is removed. Removal of oil or other adverse substances will begin immediately or area will be flagged and fenced. Other cleanup will be done as needed. Planting and revegetation will be done between July 15 and September 15.

11. Other Information:

- a. General topography: Shown on Vicinity Lease Map. The terrain at the wellsite is gently rolling hills. Vegetation is primarily sage brush and natural grasses.
- b. Animal life: Prairie dogs, domestic livestock, rabbits and native rodents and predators.
- c. Dwellings (nearest): Approximately 4-1/2 miles.
- d. General location: Approximately 8.5 miles west of Lakewood, New Mexico.
- e. Drainage: Internal
- f. Surface Owner: The surface is owned by the Federal Government

A. P. D. (cont.)
Thirteen Point Surface Use Plan
North Indian Basin Unit No. 2

12. Operator Representatives:

David Nordt
Drilling, Completion, & Workover Superintendent
P. O. Box 552
Midland, TX 79702
800/351-1417
915/682-1626

13. Certification:

I hereby certify that I, or someone under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions that presently exist; that the statements made in this plan are, to the best of my knowledge and belief, true and correct; and that the work associated with the operations proposed herein will be performed by MARATHON OIL COMPANY and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

1/4-96
Date

W.J. P. Nordt
D.P. Nordt

**DRILLING PROGRAM
MARATHON OIL COMPANY**

North Indian Basin Unit No. 2

1. **Estimated KB Elevation: 3794'**

<u>FORMATION CONTENT</u>	<u>-----TOP-----</u>		<u>-----BASE-----</u>		FLUID
	<u>MEASURED</u>	<u>SUBSEA</u>	<u>MEASURED</u>	<u>SUBSEA</u>	
Morrow	9,098'	-5304'	9,500'	-5706'	gas
Barnett	9,500'	5706'	9,758'	-5964'	gas, water
Mississippian	9,758'	5964'	10,148'	-6354'	
Woodford	10,148'	-6354'	10,210'	-6416'	
Devonian	10,210'	-6416'	11,160'	-7366'	

<u>FORMATION</u>	<u>---EST---</u>	<u>SBHP---</u>	<u>EST SBHT</u>	<u>H2S</u>	<u>---SIGNIFICANCE---</u>
	<u>PSIG</u>	<u>PPG EMW</u>	<u>DEG f</u>	<u>PPM</u>	<u>(obj, marker, etc.)</u>
Morrow	3639	9.4		500	marker
Barnett	3800	9.4			marker
Mississippian	3903	9.4			marker
Woodford	4059	9.4			
Devonian	3063	8.3			objective

2. See (1) above.

If any unexpected water or mineral bearing zones are encountered, they will be reported, evaluated, and protected as circumstances and regulations require.

3. **Pressure Control Equipment:**

7" Production: 1" 3M annular tested to 200#/2000#, 11" 3M dual rams, choke manifold and mud cross, tested to 300#/3000#.

Flow indicator, PVT, H₂S Sensors, air packs, stroke counter, rotating head.

BOP systems will be consistent with API RP 53. Blowout preventers will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. Preventers and casing will be pressure tested before drilling casing cement plugs.

Upper and lower kelly cocks with valve handle and safety valve and subs to fit all drillstring connections in use will be available on rig floor.

A. P. D. (cont.)
Thirteen Point Surface Use Plan
North Indian Basin Unit No. 2

Test Frequency

1. When installed.
2. Anytime a pressure seal is broken (test confined only to affected equipment).
3. At least every 20 days.
4. Blind and pipe rams shall be activated each trip but not more than once/day.

4. Casing and Cement Program:

DEPTH— FROM TO	SECTION LENGTH	HOLE SIZE	CSG SIZE	WT. PPF	GRADE	THREADS COUPLINGS	NEW USED
7800' 10000'	2200'	6.125"	4.5"	11.35	L-80	FL4-S	New
10000' 11000'	1000'	3.375"	Open Hole				

5. Cementing Summary

4 1/2" liner, 7800' - 10,000' ECP tool depth - above landing collar

Slurry: Class "H" with 5% CSE + 1% CF-14, 3% WL-1P

FROM DEPTH	TOC	HOLE SIZE	% EXCESS	YIELD	DENSITY	QTY SX
10,000'	9650'	6.125	50	1.28	15.33	100
9,650'	8006'	ANN	50	1.28	15.33	65
8,006'	7800'	CSG	0	1.28	15.33	50

The 4 1/2" liner will be run below the Woodford Shale to ensure that the ECP will isolate the Woodford from the Devonian.

Centralizer Program:

4 1/2" Conventional centralizers middle of 1st joint, then every joint to 9000', and 1 centralizer every 4th joint thereafter to 7800'.

A. P. D. (cont.)

Thirteen Point Surface Use Plan

North Indian Basin Unit No. 2

5. Mud Program:

<u>--DEPTH--</u>		<u>MUD TYPE</u>	<u>WEIGHT (PPG)</u>	<u>VIS</u>	<u>WL CC</u>	<u>ADDITIVES</u>	<u>VISUAL MONTR.</u>
<u>FROM</u>	<u>TO</u>						
8006'	10000'	cut brine	9.2	32.36	<20	Salt gel, starch, caustic	Steel Pits
10000'	11000'	freshwater	8.4	28.30	N/C	Gel	Steel Pits

Sufficient quantities of additives will be on location to maintain above mud properties for any anticipated well conditions.

6. Logging, Testing & Coring Programs:

<u>LOG/TEST/CORE/MUDLOG/OTHER</u>	<u>--INTERVAL--</u>		<u>REMARKS</u>
	<u>FROM</u>	<u>TO</u>	
DLL/MSFL/GR	TD	8000'	
LDT/CNL/GR/CAL	TD	8000'	
MUD LOGGER	NONE		
NO CORES OR DST'S			

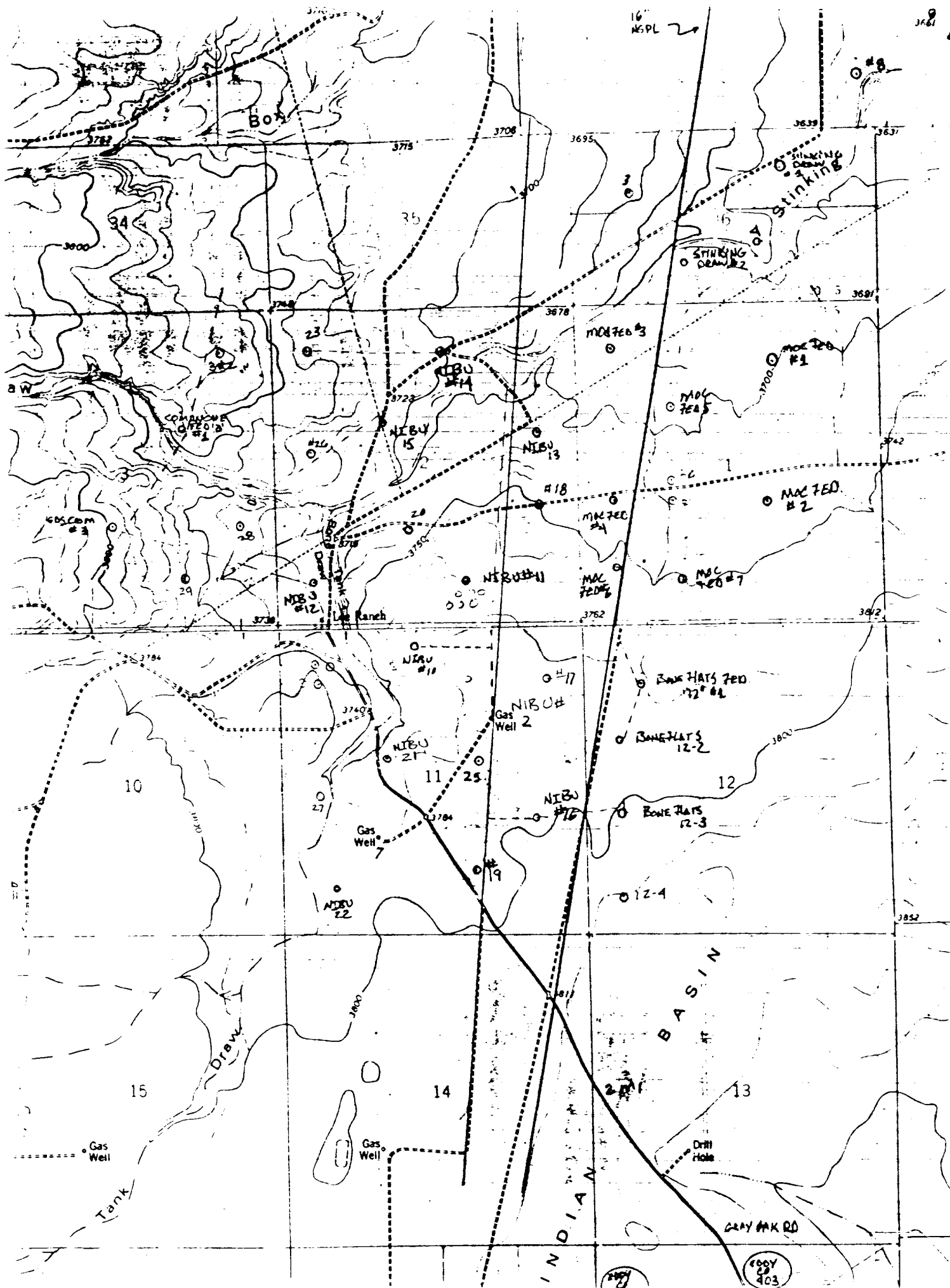
7. Abnormal Pressures, Temperatures or Potential Hazards:

None anticipated.

8. Other Information:

Anticipated Starting Date: As soon as possible.

Duration of Well: drilling - 18 days, completion - 10 days.



EXISTING ROAD

PROPOSED WORKOVER PIT

RESERVE PIT

H2S Detection Equipment

Wind Direction Indicator

Self Contained Breathing Equip.

Briefing Area



CIRCULATING MUD TANKS

PUMPS

SUBSTRUCTURE AND DOGHOUSE

PIPE RACKS

CATWALK

MUD LOGGER

FUEL TANK

WATER TANK

CHEMICAL TOILET

NIRU #2
EXISTING PAO

COMPANY TRAILER

PARKING

200'

300'

EXISTING ROAD

Prevailing Wind Direction

Southwest

Foot-path for emergency egress

MARATHON OIL COMPANY

H₂S DRILLING OPERATIONS PLAN

1. HYDROGEN SULFIDE TRAINING

All contractors and subcontractors employed by Marathon Oil Company will receive or have received training from a qualified instructor within the last twelve months in the following areas prior to commencing drilling operations on this well. —

1. The hazards and characteristics of hydrogen sulfide (H₂S)
2. Safety precautions
3. Operations of safety equipment and life support systems

In addition, contractor supervisory personnel will be trained or prepared in the following areas:

1. The effect of H₂S on metal components in the system. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-down procedures when drilling or reworking a well, blowout prevention and well control procedures, if the nature of work performed involves these items.
3. The contents and requirements of the contingency plan when such plan is required.

All personnel will be required to carry documentation of the above training on their person.

II. H₂S EQUIPMENT AND SYSTEMS

1. Safety Equipment

The following safety equipment will be on location.

- A. Wind direction indicators as seen in attached diagram.
- B. Automatic H₂S detection alarm equipment (both audio and visual).
- C. Clearly visible warning signs as seen on the attached diagram. Signs will use the words "POISON GAS" and "CAUTION" with a strong color contrast.
- D. Protective breathing equipment will be located in the dog house and at briefing areas as seen in the attached diagram.

2. WELL CONTROL SYSTEMS

A. Blowout Prevention Equipment

Equipment includes but is not limited to:

- a. pipe rams to accomodate all pipe sizes
- b. blind rams
- c. choke manifold
- d. closing unit

Auxillary equipment added as appropriate includes:

- a. annular preventor _____
- b. rotating head _____
- c. mud- gas separator _____
- d. flare line and means of ignition _____
- e. remote operated choke _____

B. Communication

The rig contractor will be required to have two-way communication capability. Marathon Oil Company will have either land-line or mobile telephone capabilities.

C. Mud Program

The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight, safe drilling practices, and the use of H₂S scavengers when appropriate will minimize hazards when penetrating H₂S bearing zones.

D. Drill Stem Test intervals are as follows:

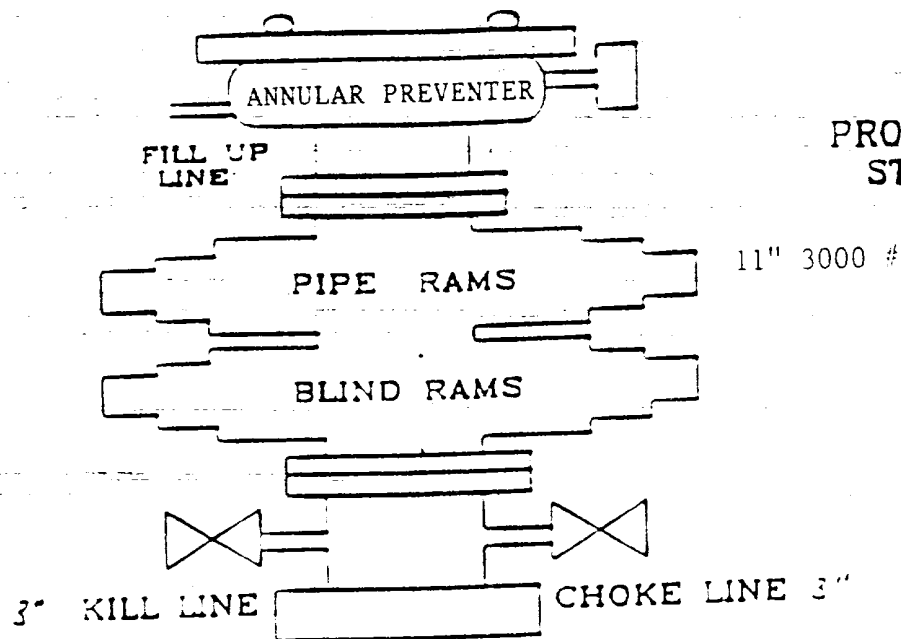
DST No. 1	_____ ft. to _____ ft.
DST No. 2	_____ ft. to _____ ft.
DST No. 3	_____ ft. to _____ ft.

Drill Stem Testing Safety Rules are attached.

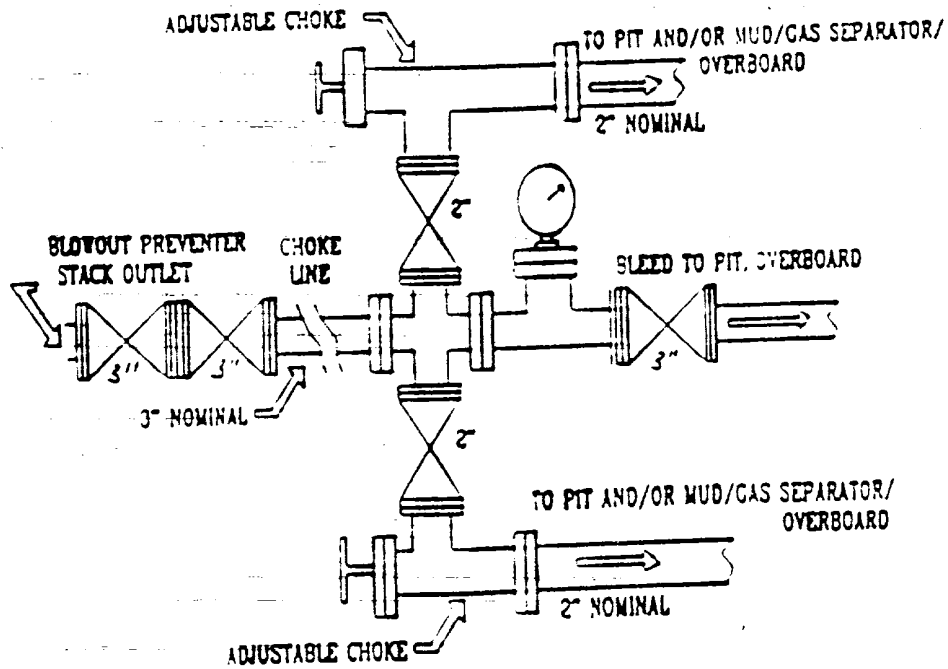
III. WELL SITE DIAGRAM

A complete well site diagram including the following information is attached.

- 1. Rig orientation
- 2. Terrain
- 3. Briefing areas
- 4. Ingress and egress
- 5. Pits and flare lines
- 6. Caution and danger signs
- 7. Wind indicators and prevailing wind direction



PRODUCTION
STACK



North Indian Basin Unit Well No. 2

1650' FNL and 1650' FEL
Section 11, T-21-S, R-23-E
Eddy County, New Mexico

13-3/8", 48# set at 236'

9-5/8", 36#, J-55
set at 2379'.
DV tool at 723'.

EZ Drill
7510'

CIBP
7510'

Cement
Plug
7649'
to
8070'

7" 23# and 26#
set at 8006'

Cement
Plug
9000'
to
9545'

TD: 9545'

Current Configuration

TD: 9545' KB: 3794' GL: 3785'

Surface Casing:

13-3/8", 48#, H-40 set at 236' Cemented with 300
sxs Trinity portland w / 2% HA-5.
Circulated cement.

Intermediate Casing:

9-5/8", 36#, J-55 set at 2379', DV Tool at 723'.
Cemented 1st stage with 450 sxs Trinity Lite
w/ additives and 200 sxs Trinity Reg w/ additives.
2nd stage w/ 300 sxs Trinity Lite w/ additives, and
100 sxs Trinity. Cemented 180 sxs through
1-1/4" to surface.

Production Casing:

7", 23# and 26# J-55 and N-80 set at 8006'
Cemented w / 2 plug method w/ 600 sxs Trinity Lite
w/ additives. Tailed in w/ 300 sxs Incor Lone Star
w/ additives. Did not circulate.
TOC: 4000' (Temperature Survey)

Perforations

6562' to 6668' Squeezed w/ 125 sxs cement
7552' to 7563' Squeezed w/ 275 sxs cement
7683' to 7716' Squeezed w/ 639 bbl Polymer
7734' to 7758' Open
7844' to 7862' Open

North Indian Basin Unit Well No. 2

1650' FNL and 1650' FEL
Section 11, T-21-S, R-23-E
Eddy County, New Mexico

13-3/8", 48# set at 236'

4-1/2" Tubing
Internally Coated
Fiberglass Liner

9-5/8", 36#, J-55
set at 2379'.
DV tool at 723'.

7", 23# and 26# set at 8006'

4-1/2" set at 10,000'

Open Hole Interval:
10,000 - 11,000'

TD: 9545' KB: 3794' GL: 3785'

Surface Casing:

13-3/8", 48#, H-40 set at 236' Cemented with 300
sxs Trinity portland w / 2% HA-5.
Circulated cement.

Intermediate Casing:

9-5/8", 36#, J-55 set at 2379', DV Tool at 723'.
Cemented 1st stage with 450 sxs Trinity Lite
w/ additives and 200 sxs Trinity Reg w/ additives.
2nd stage w/ 300 sxs Trinity Lite w/ additives, and
100 sxs Trinity. Cemented 180 sxs through
1-1/4" to surface.

Production Casing:

7", 23# and 26# J-55 and N-80 set at 8006'.
Cemented w / 2 plug method w/ 600 sxs Trinity Lite
w/ additives. Tailed in w/ 300 sxs Incor Lone Star
w/ additives. Did not circulate.
TOC: 4000' (Temperature Survey)

Perforations

6562' to 6668' Squeezed w/ 125 sxs cement
7552' to 7563' Squeezed w/ 275 sxs cement
7683' to 7716' Squeezed w/ 639 bbl Polymer
7734' to 7758' Open
7844' to 7862' Open

PROPOSED COMPLETION

Cement squeeze perforations:

7844' to 7862' with 100 sxs cement.
7734' to 7758' with 100 sxs cement.
7683' to 7716' with 150 sxs cement.

Liner

4-1/2" Liner set at 7800' to 10,000' with a 4-1/2"
Liner Hanger / Polished Bore Receptical and a
4-1/2" External Casing Packer at 10,000'.
Cement with 350 sxs cement.

Open Hole Interval:

10,000 to 11,000'

Stimulation

Acidize with 6000 gallons 15% HCl acid.